

Work Order ID 81856

81856

Page 1

March-19-12 4:26:38 PM

Item ID: D350-636-017

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Skidtube w/ Training Wearplates, LH

Start Date: 19/03/2012 Start Qty: 1.00

1

Cust Item ID:

Required Date: 02/04/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: MLJ

Date: 12/03/20

Tooling:

Date:

Run Start *NR1*

QC:

Date:

SPC (Y/N):

Date:

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
D4168	A
IIN-D350-636	I

100

0.00

100

DOCUMENT CONTROL

DC

Memo

0.00

Document Control

Photocopy blue file and type labels per PPP D350-636-017 CHG 002

Scide/26
or chg 3 per ECN
12-545
(D4154-041 Rev B or C?)

MLJ 12-6-26

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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QC:

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Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

110

0.00

110

Skidtubes

Skidtubes

Memo

0.00

Skidtubes

1- Pick D2600-3 Bent

2- Deburr FWD and AFT ends, remove bending marks. Scribe batch# inside
AFT end per dwg D27503- Drill pilot holes for blade fitting bolt holes using DT8983. Open to 0.500",
deburr.4- Locate DT8330 off of blade fitting bolt holes and drill pilot holes for blade
fitting

5- Drill fwd step holes using DT9616. Ensure proper positioning.

6- Drill pilot holes as per Dwg D2750 sheet 4 (D2750-1 details). Drill using drill
Jig DT8150 & DT8863A for first side only DT8863B for second side (detail B)7- Clecko DT8863B on second side of tube and drill pilot holes for detail B.
SECOND SIDE8-Open up holes for Detail B to 0.375" (4 holes per side) and blade fitting
location holes to 0.500" (total of 4 holes per side) as per dwg D2750. Open up
holes for ground handling and detail C to 0.500" (8 holes per side)9-Drill pilot holes for wearplates as per Dwg D2750 using DT8108 open to
0.297".

10-Open up holes of Detail A to 0.297" (total of 2 holes per side)

1 0 JE 12/25/30

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SPC (Y/N):

Date:

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp11-Weld D2744 Cap as per Dwg D2750 and QSI 004. Fill grooves in bend left
from bending as per QSI 004
A/R Aluminum Rod batch: M1208547 BE 12/05/30

12-Grind welds flush as per Dwg D2750

120

QC10- Inspect visual per QSI004- ground welds

0.00

120

QC

Memo

0.00

Quality Control

130

QC5- Inspect part completeness to step on W/O

0.00

130

QC

Memo

0.00

Quality Control

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QC:

Date:

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Date:

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

140

Chemical Conversion Coat per QSI005 4.1

0.00

140

HandFinish

Memo

0.00

Hand Finishing

1 7/6 12-5-31

150

QC3- Inspect Part Finish

0.00

150

QC

Memo

0.00

Quality Control

DP 12-6-1

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
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QC:

Date:

SPC (Y/N):

Date:

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Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

160

0.00

160

Skidtubes

0.00

Skidtubes

Memo

Skidtubes

1-Open up holes of Detail C and ground handling to 0.625" (total of 8 holes per side)
as per dwg D2750.

2-Open up holes of Detail B to 0.750" (total of 4 holes per side)
as per dwg D2750.

3- Open float hole to 0.500" (4 per side)

4-Chamfer holes of Detail B, C, ground handling and float holes per dwg D2750
(welding instructions on sheet 8)

5-Deburr and blow out all chips from inside of tube

6- Prepare tube for welding, remove alodine as required.

7-Bond web D2739 in place as per QSI 015

A/R Sikaflex-291

batch: M121409exp. date: 13-4-12

8- Weld spacers D3490-1, D3490-3 and D2743 as per dwg D2750 & QSI004
(welding instructions on sheet 8)

A/R Aluminum Rod

batch: M120854

9- At section AJ-AJ drill out x-bolt spacer to 0.404"

10-Grind welds flush as per Dwg D2750

BE 12-06-06CF 12-6-4BE 12-06-05

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Page 6

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Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

11-Spot face ground handling holes section (total of 4 places per side) as per
dwg D2750

12- C'bore section CJ-CJ

13- Deburr holes

***** FOR DELUXE SKIDTUBE IF APPLICABLE DRILL TOW RING
HOLE IN TUBE *****

170

QC10- Inspect visual per QSI004- ground welds

0.00

170

QC

Memo

0.00

Quality Control

180

QC5- Inspect part completeness to step on W/O

0.00

180

QC

Memo

0.00

Quality Control

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Page 7

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QC:

Date:

SPC (Y/N):

Date:

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DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

190

Pressure Wash per QSI005 4.3

0.00

190

HandFinish

Memo

0.00

Hand Finishing

Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch.

1 MB126-7

200

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00

200

Powdercoat

Memo

0.00

Powder Coating

START TIME:

OVEN TEMPERATURE:

FINISH TIME:

10:45
3200F

11:15

1X M-L
12/06/07

210

QC3- Inspect Part Finish

0.00

210

QC

Memo

0.00

Quality Control

Inspect for foreign object per QSI 024

1X 6 M 12/06/07

M121134

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Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
220	HandFinishing	0.00							
220									
HandFinish	Memo	0.00							
Hand Finishing	1- Install inserts as per Dwg D2750								
230	HandFinishing	0.00							
230									
HandFinish	Memo	0.00							
Hand Finishing	1-Inspect for Foreign Objects								
	2-Spray inside of tube with "LPS-3" batch: <u>N/A</u>								
	3-Install blade fitting D3488-041, wearshoes and ground handling hardware as per dwg D2750 SIKA FLEX 241 BATCH: <u>121 404</u> EXP DATE: <u>13/03</u>								
	4-assemble o'ring to plug as per dwg D3492 and apply o'ring lube A/R 55-o'ring lube batch: <u>110 348</u>								
	5-Coat all exposed fasteners with "LPS Procyon" batch: <u>114 596</u>								

Dart Aerospace Ltd

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Page 9

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Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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240 QC5- Inspect part completeness to step on W/O 0.00

240

QC

Memo

0.00

Quality Control

14/4/12 8D 12-06-22

250 Pick Kit 0.00

250

Packaging

Memo

0.00

Packaging

Ref 26 U

260 QC4- 100% Inspect kits for completeness 0.00

260

QC

Memo

0.00

Quality Control

Bridget

*****ensure antiseize is on AN8C21A bolts*****

Dart Aerospace Ltd

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March-19-12 4:26:38 PM

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Page 10

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SPC (Y/N):

Date:

Stop ***NR2***

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--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

270

270

Packaging

Packaging

Memo

0.00

Packaging

Identify and pack for shipping as per PPPD350-636-017

Location:

PPP rev: B

/X

SP

12-6-26

280

280

QC

Quality Control

QC21- Final Inspection - Work Order Release

Memo

0.00

0.00

12/6/27

ME 12-06-27

Dart Aerospace Ltd

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Picklist Print

March-19-12 4:26:42 PM

Page 1

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Parent Item Name: Skidtube w/ Training Wearplates, LH

Start Date: 19/03/2012

Required Date: 02/04/2012

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP rev:A 10.09.28 new issue DD verf:EC
11.04.14 ecn11-553 DD verf:EC
per NCR 11-906 DD verf:EC

IPP Rev:B
IPP Rev:C 11.10.18 as

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D3490-1		Manufactured	No			160	Each	37.0000	4	4			
---------	--	--------------	----	--	--	-----	------	---------	---	---	--	--	--

D3490-1

Cross Bolt Spacer

**

BE 12/06/05
B 83269 1x4

Location	Loc Qty	Loc Code
LG001	37	
62450	2	
74875	4	
77042	3	
78793	28	

AN3C34A		Purchased	No			230	Each	50.0000	1	1			
---------	--	-----------	----	--	--	-----	------	---------	---	---	--	--	--

AN3C34A

BOLT

**

SP 12/06/07

Location	Loc Qty	Loc Code
ST353	50	
116075 ✓	30	
117514	20	

Dart Aerospace Ltd

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Required Date: 02/04/2012

Start Qty: 1.00

Required Qty: 1.00

AN3C36A

Purchased

No

230

Each

154.0000

4

4

AN3C36A

BOLT

**

4

2P

12/06/22

Location

Loc Qty

Loc Code

FG

4

101261

4

ST353

150

116590

0

119083

2

119324

53

120641

40

121013

55

121389

230

Each

207.0000

1

1

AN3C37A

Purchased

No

AN3C37A

BOLT

**

1

2P

12/06/22

Location

Loc Qty

Loc Code

ST354

207

116874

11

117010

2

120422

44

120731

50

121068

100

121068

230

Each

40.0000

1

1

AN3C42A

Purchased

No

AN3C42A

BOLT

**

1

2P

12/06/22

Location

Loc Qty

Loc Code

ST354

40

106176

1

119673

14

120464

25

March-19-12 4:26:42 PM

Shop Packet Print

Page 2

Dart Aerospace Ltd

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Required Date: 02/04/2012

Start Qty: 1.00

Required Qty: 1.00

D3490-5 Manufactured No

230

Each

45.0000

4

4

D3490-5

Cross Bolt Spacer

**

BE 12/04/05
B 78958 * 4 ✓

Location

Loc Qty

Loc Code

LG

25

78958

25

LG001

20

59230

20

D3492-1 Manufactured No

230

Each

122.0000

8

8

D3492-1

Plug

**

8 (2P) 12/06/07

Location

Loc Qty

Loc Code

FP002

122

69531

8

74444

2

76235

12

77037

100

D3492-5 Manufactured No

230

Each

32.0000

8

8

D3492-5

Plug

**

8 (2P) 12/06/07

Location

Loc Qty

Loc Code

FP002

32

77044

32

78912 ✓

83100 ✓

6

2

March-19-12 4:26:42 PM

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Page 3

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

March-19-12 4:26:42 PM

Page 4

Work Order ID: 81856

81856

Parent Item: D350-636-017

D350-636-017

Parent Item Name: Skidtube w/ Training Wearplates, LH

Start Date: 19/03/2012

Required Date: 02/04/2012

Start Qty: 1.00

Required Qty: 1.00

D3873-1 Manufactured No

230 Each

151.0000 7 7

D3873-1

Bushing

**

7

(2P)

12/06/22

Location	Loc Qty	Loc Code
ST057 76791✓	105	
79561	105	
ST067	46	
64760	1	
68247	4	
73829	19	
73830	2	
79560	20	

D4154-041 Manufactured No

230 Each

1.0000 1 1

D4154-041

Wearplate Assembly

**

1

(2P)

12/06/22

Location	Loc Qty	Loc Code
FG 83046 83020	1	
77007	1	

D4170-1 Manufactured No

230 Each

9.0000 4 4

D4170-1

Bushing

**

B 82043 24 BER 12/06/05 ✓

Location	Loc Qty	Loc Code
LG001	9	
71844	5	
76677	4	

D4171-1 Manufactured No

230 Each

7.0000 1 1

D4171-1

Bushing

**

1

(2P)

12/06/22

Location	Loc Qty	Loc Code
ST135 82355✓	7	
77008	7	

March-19-12 4:26:42 PM

Shop Packet Print

Page 4

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

March-19-12 4:26:42 PM

Page 5

Work Order ID: 81856

81856

Parent Item: D350-636-017

D350-636-017

Parent Item Name: Skidtube w/ Training Wearplates, LH

Start Date: 19/03/2012

Required Date: 02/04/2012

Start Qty: 1.00

Required Qty: 1.00

MS21043-3

Purchased

No

230

Each

793.0000

5

5

MS21043-3

Nut

**

5 (2P) 12/06/22

Location

Loc Qty

Loc Code

FG

72

103691

72

GA

304

120693

304

ST301

417

118077

2

118614 ✓

365

118686

30

119758

20

NAS1149C0363R

Purchased

No

230

Each

3,373.000

9

9

NAS1149C0363R

Washer

**

9 (2P) 12/06/22

Location

Loc Qty

Loc Code

ST297

3373

114742 ✓

3373

NAS1515H3L

Purchased

No

230

Each

180.0000

4

4

*NAS1515H3I *

WASHER

**

4 (2P) 12/06/07

Location

Loc Qty

Loc Code

FG

40

102472

40

ST277

140

118686

3

119438

1

120072

36

120360

100

March-19-12 4:26:42 PM

Shop Packet Print

Page 5

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

March-19-12 4:26:42 PM

Page 6

Work Order ID: 81856

81856

Parent Item: D350-636-017

D350-636-017

Parent Item Name: Skidtube w/ Training Wearplates, LH

Start Date: 19/03/2012

Required Date: 02/04/2012

Start Qty: 1.00

Required Qty: 1.00

NAS1611-005

Purchased

No

230

Each

204.0000

8

8

NAS1611-005

O-RING

**

8

2P

12/06/07

Location

Loc Qty

Loc Code

FP001

204

106099

31

114220 ✓

105

119438

68

NAS1611-010

Purchased

No

230

Each

201.0000

8

8

NAS1611-010

O-RING

**

8

2P

12/06/07

Location

Loc Qty

Loc Code

FP

121584 ✓

50

110915

0

120770

50

FP001

151

110915

14

117460

8

118077

1

118612

3

119438

47

120308

28

120986

50

NAS1149D0863J

Purchased

No

250

Each

227.0000

2

2

NAS1149D0863.J

WASHER

**

12/4/2011

Location

Loc Qty

Loc Code

ST298

227

118078

36

119307

91

120308

100

120308

March-19-12 4:26:42 PM

Shop Packet Print

Page 6

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

March-19-12 4:26:42 PM

Page 7

Work Order ID: 81856

81856

Parent Item: D350-636-017

D350-636-017

Parent Item Name: Skidtube w/ Training Wearplates, LH

Start Date: 19/03/2012

Required Date: 02/04/2012

Start Qty: 1.00

Required Qty: 1.00

D2744

Manufactured No

110

Each

57.0000

1

1

D2744

Cap

**

Location

Loc Qty

Loc Code

LG002

57

62715

1

70881

9

71861

5

78900

42

BE 12/05/30
B 83442 *1
B 78900 *1 ✓

D2600-3-BENT

Manufactured No

110

Each

22.0000

1

1

D2600-3-BENT

Extrusion Bent

**

Location

Loc Qty

Loc Code

LG

22

66875

7

73253

1

75021

1

75022

1

75023

1

81330

11

BE 12/05/30
B 83442 *1 ✓

D2743

Manufactured No

160

Each

224.0000

8

8

D2743

Crossbolt Spacer

**

Location

Loc Qty

Loc Code

LG001

224

67766

4

68251

3

73403

64

74445

1

78603

52

79517

100

BE 12/06/05
B 83262 *8 ✓

March-19-12 4:26:43 PM

Shop Packet Print

Page 7

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

March-19-12 4:26:43 PM

Page 8

Work Order ID: 81856

81856

Parent Item: D350-636-017

D350-636-017

Parent Item Name: Skidtube w/ Training Wearplates, LH

Start Date: 19/03/2012

Required Date: 02/04/2012

Start Qty: 1.00

Required Qty: 1.00

D2739

Manufactured No

160 Each

7.0000 1 1

D2739

3501 Beam

**

① CF 126-4

Location

Loc Qty

Loc Code

LG

7

72155

1

80083

6

ALS4-1032-225

Purchased No

230 Each

1,056.000 4 4

AI S4-1032-225

Insert

**

4 ② 12/06/07

Location

Loc Qty

Loc Code

ST281 121269✓

1019

108696

146

110768

62

118386

55

118966

68

120671

688

ST282

37

120410

24

120451

13

AN8C35A

Purchased No

230 Each

64.0000 1 1

AN8C35A

BOLT

**

1 ② 12/06/07

Location

Loc Qty

Loc Code

FP002

63

115960

1

117834

10

118286✓

52

ST346

1

114442

0

115188

0

115960

1

March-19-12 4:26:43 PM

Shop Packet Print

Page 8

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Page 9

March-19-12 4:26:43 PM

Work Order ID: 81856

81856

Parent Item: D350-636-017

D350-636-017

Parent Item Name: Skidtube w/ Training Wearplates, LH

Start Date: 19/03/2012

Required Date: 02/04/2012

Start Qty: 1.00

Required Qty: 1.00

D3488-041

Manufactured No

230 Each

16.0000 1 1

D3488-041

Blade Fitting Assembly, LH

**

1

2P 12/06/07 22

Location

Loc Qty

Loc Code

FP002

83407✓

16

61689

1

75056

7

77021

8

AN6C44A

Purchased No

230 Each

103.0000 4 4

AN6C44A

BOLT

**

4

4P 12/06/07

Location

Loc Qty

Loc Code

FG

2

103964

2

ST343

101

120095

8

120143

25

120465

27

120641

21

121013

20

121689✓

March-19-12 4:26:43 PM

Shop Packet Print

Page 9

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

March-19-12 4:26:43 PM

Page 10

Work Order ID: 81856

81856

Parent Item: D350-636-017

D350-636-017

Parent Item Name: Skidtube w/ Training Wearplates, LH

Start Date: 19/03/2012

Required Date: 02/04/2012

Start Qty: 1.00

Required Qty: 1.00

MS21083C8

Purchased

No

230

Each

80.0000

1

1

MS21083C8

NUT

**

1

(20)

12/06/22

Location

Loc Qty

Loc Code

FP002

121185✓

1

115884

1

ST303

13

115884

0

118077

1

119309

2

119436

8

119638

2

ST304

66

120142

16

120731

25

121011

25

D3631-1

Manufactured

No

230

Each

207.0000

8

8

D3631-1

Washer

**

8

(20)

12/06/07

Location

Loc Qty

Loc Code

ST072

83588✓

207

68062

2

75548

205

AN960C10L

*

NAS1149C0332✓

Purchased

No

230

Each

0.0000

4

4

*AN960C10I *

washer

**

4

(20)

12/06/07

~~115884~~

122663

March-19-12 4:26:43 PM

Shop Packet Print

Page 10

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

March-19-12 4:26:43 PM

Page 11

Work Order ID: 81856

81856

Parent Item: D350-636-017

D350-636-017

Parent Item Name: Skidtube w/ Training Wearplates, LH

Start Date: 19/03/2012

Required Date: 02/04/2012

Start Qty: 1.00

Required Qty: 1.00

D2745

Manufactured No

230 Each

128.0000 8 8

D2745

Bushing

**

8

(2P)

12/06/07

Location

Loc Qty

Loc Code

FP

83260

100

79518

100

FP001

28

69529

1

76142

1

78597

26

NAS1149C0832R

Purchased

No

230 Each

303.0000 1 1

NAS1149C0832R

WASHER

**

1

(2P)

12/06/07

Location

Loc Qty

Loc Code

ST297

303

114915

303

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

March-19-12 4:26:43 PM

Work Order ID: 81856

81856

Parent Item: D350-636-017

D350-636-017

Parent Item Name: Skidtube w/ Training Wearplates, LH

Start Date: 19/03/2012

Required Date: 02/04/2012

Start Qty: 1.00

Required Qty: 1.00

AN3C6A

Purchased

No

230

Each

579.0000

4

4

AN3C6A

BOLT

**

4

(DP) 12/06/07

Location

Loc Qty

Loc Code

FP001

1

111982

1

ST351

121682✓

578

111982

2

116419

23

116549

2

116704

12

117619

10

117688

1

117872

5

118422

13

119449

21

120423

89

120693✓

400

2

MS21043-6

Purchased

No

230

Each

805.0000

4

4

MS21043-6

NUT

**

4

(DP) 12/06/07

Location

Loc Qty

Loc Code

FG

20

103693

20

ST301

785

112314

79

117887

6

118384✓

200

120308

500

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

March-19-12 4:26:43 PM

Page 13

Work Order ID: 81856

81856

Parent Item: D350-636-017

D350-636-017

Parent Item Name: Skidtube w/ Training Wearplates, LH

Start Date: 19/03/2012

Required Date: 02/04/2012

Start Qty: 1.00

Required Qty: 1.00

D3493-1

Manufactured No

250

Each

62.0000

2

2

D3493-1

Washer

**

82023

[Handwritten signature]

Location

Loc Qty

Loc Code

ST050

62

70697

2

77573

20

78835

40

MS21083C8

Purchased

No

250

Each

80.0000

2

2

MS21083C8

NUT

**

m121349

[Handwritten signature]

Location

Loc Qty

Loc Code

FP002

1

115884

1

ST303

13

115884

0

118077

1

119309

2

119436

8

119638

2

ST304

66

120142

16

120731

25

121011

25

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____
Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

March-19-12 4:26:43 PM

Work Order ID: 81856

81856

Parent Item: D350-636-017

D350-636-017

Parent Item Name: Skidtube w/ Training Wearplates, LH

Start Date: 19/03/2012

Required Date: 02/04/2012

Start Qty: 1.00

Required Qty: 1.00

AN8C21A

Purchased

No

250

Each

67.0000

2

2

AN8C21A

BOLT

**

M12/275

Location

Loc Qty

Loc Code

ST343

67

118758

5

120094

38

120872

4

121067

20

D2741

Manufactured

No

250

Each

33.0000

1

1

D2741

Blade, 350 Skidtube

**

83/35

Location

Loc Qty

Loc Code

ST

-10

ST466

43

71856

1

76984

32

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

QTY -041	QTY -042	QTY -043	QTY -044	PART NUMBER	DESCRIPTION
X				D4168-041	350 SKIDTUBE ASSEMBLY, LH
	X			D4168-042	350 SKIDTUBE ASSEMBLY, RH
		X		D4168-043	350 SKIDTUBE ASSEMBLY, LH
			X	D4168-044	350 SKIDTUBE ASSEMBLY, RH
1	1	1	1	D2739	WEB
8	8	8	8	D2743	SPACER
1	1	1	1	D2744	CAP
8	8	8	8	D2745	BUSHING
1		1		D3488-041	BLADE FITTING, LH
	1		1	D3488-042	BLADE FITTING, RH
4	4	4	4	D3490-1	SPACER
4	4			D3490-3	SPACER
		4	4	D3490-5	SPACER
8	8	8	8	D3492-041	PLUG ASSEMBLY
8	8			D3492-043	PLUG ASSEMBLY
		8	8	D3492-045	PLUG ASSEMBLY
8	8	8	8	D3631-1	WASHER
7	7	7	7	D3873-1	BUSHING
1	1	1	1	D4154-041	WEARPLATE ASSEMBLY
	1			D4168-1	SKIDTUBE WELDMENT, LH
		1		D4168-2	SKIDTUBE WELDMENT, RH
		1		D4168-3	SKIDTUBE WELDMENT, LH
			1	D4168-4	SKIDTUBE WELDMENT, RH
4	4	4	4	D4170-1	SPACER
1	1	1	1	D4171-1	BUSHING
4	4	4	4	ALS4-1032-225	INSERT
4	4	4	4	AN3C6A	BOLT
1	1	1	1	AN3C34A	BOLT
4	4	4	4	AN3C36A	BOLT
4	4	4	4	AN6C44A	BOLT
1	1	1	1	AN8C35A	BOLT
9	9	9	9	AN960C10	WASHER (OR NAS1149CO363R)
4	4	4	4	AN960C10L	WASHER (OR NAS1149CO332R)
1	1	1	1	AN960C816L	WASHER (OR NAS1149CO832R)
5	5	5	5	MS21043-3	NUT
4	4	4	4	MS21043-6	NUT
1	1	1	1	MS21083C8	NUT
4	4	4	4	NAS1515H3L	WASHER

GENERAL NOTES:

- 1) MATERIAL: MAKE D4168-1/-2/-3/-4 FROM D2600-3 EXTRUSION (INITIAL LENGTH = 120.0).
- 2) FINISH:
CHEMICAL CONVERSION COAT PER DART QSI 005 4.1 PRIOR TO INSTALLING D2739 WEB.
POWDER COAT WHITE (REF. 4.3.5.1) PER DART QSI 005 4.3
BLACK ANTI-SKID PAINT AS INDICATED TO 1.0 ABOVE SKIDTUBE CENTER-LINE PER DART 005 4.4 (OPTIONAL).
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: D4168-041/-042/-043/-044 = 32.3 LBS
- 8) WELD PER DART QSI 004
- 9) FINAL CONFIGURATION SHOULD HAVE THE FOLLOWING MINIMUM MECHANICAL PROPERTIES:
MINIMUM YIELD TENSILE STRENGTH = 35 KSI
MINIMUM ULTIMATE TENSILE STRENGTH = 38 KSI
- 10) COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF
POWDER COATING WITH MEK DEGREASER.
- 11) SPACER AND PLUG INSTALLED SAME AS SECTION AJ-AJ EXCEPT HORIZONTAL
- 12) SPACER AND PLUG INSTALLED SAME AS SECTION AP-AP EXCEPT HORIZONTAL

SHOP COPY
RETURN TO
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SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 81856 MCLJ
12/03/20

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2010-09-15

A NEW ISSUE		SC	10.08.09
REV.	DESCRIPTION	BY	DATE
DESIGN	SC	DART AEROSPACE USA, INC.	
DRAWN	SC	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. A
MFG. APPR.		D4168	SHEET 1 OF 11
APPROVED		TITLE	SCALE
DE APPR.		350 SKIDTUBE ASSEMBLY	NTS.
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

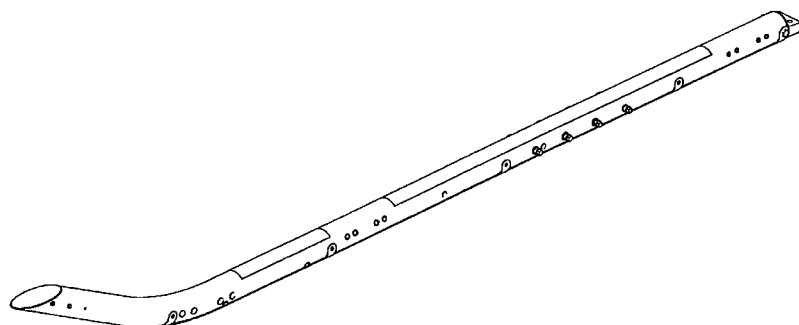
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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

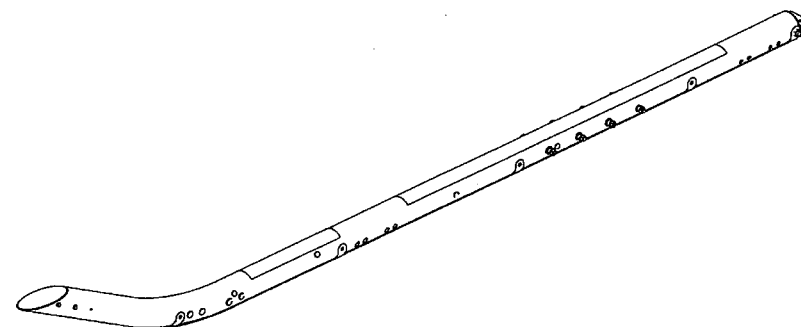
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

01256



D4168-041 350 SKIDTUBE ASSEMBLY, LH



D4168-042 350 SKIDTUBE ASSEMBLY, RH

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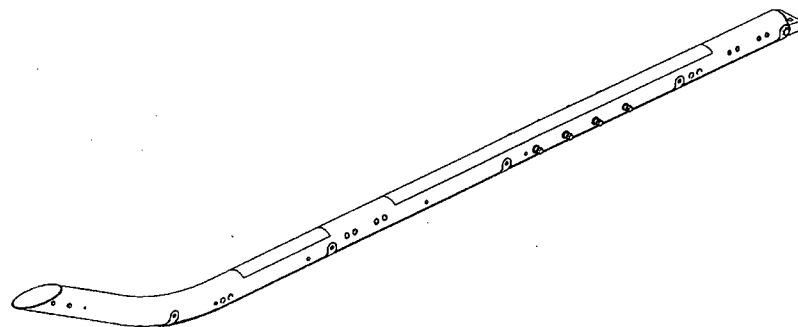
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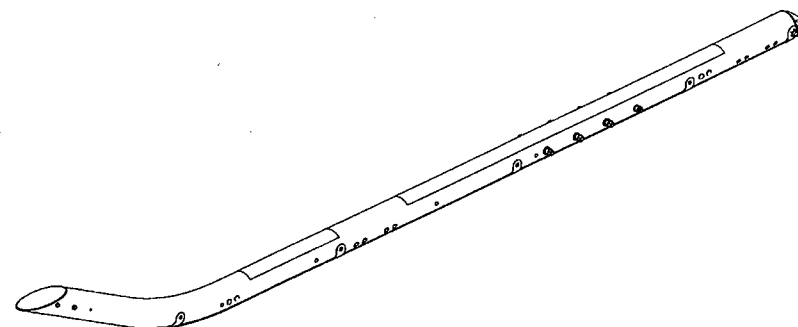
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

81856



D4168-043 350 SKIDTUBE ASSEMBLY, LH



D4168-044 350 SKIDTUBE ASSEMBLY, RH

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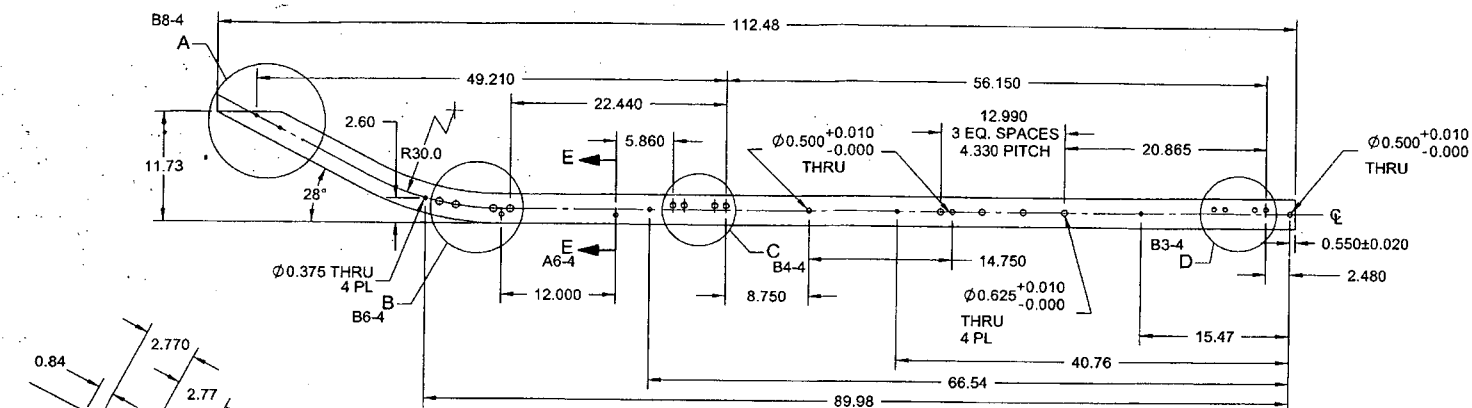
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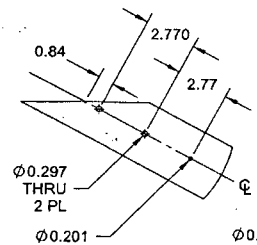
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NOTE: Date & initial all entries

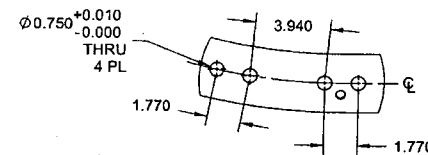
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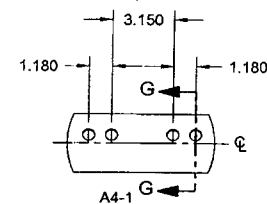
D4168-1 LH SKIDTUBE



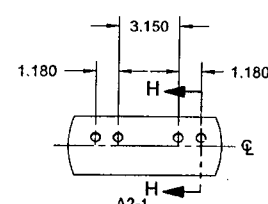
DETAIL A
SCALE 2X



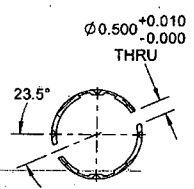
DETAIL B
SCALE 2X



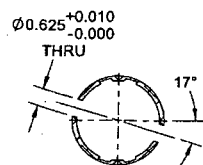
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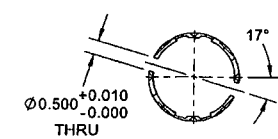
DETAIL D
SCALE 2X



SECTION E-E
SCALE 3X, 2 PL



SECTION G-G
SCALE 3X, 4 PL



SECTION H-H
SCALE 3X, 4 PL

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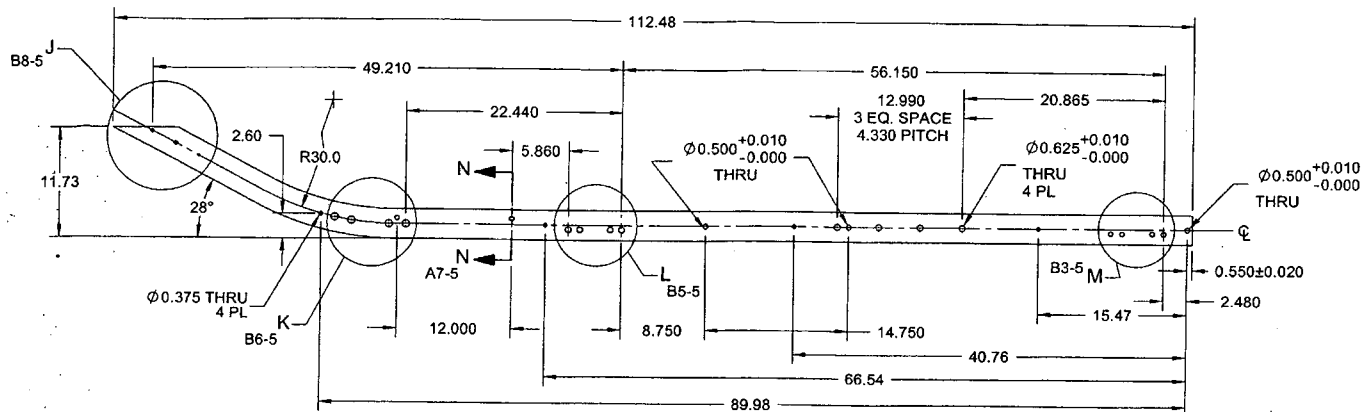
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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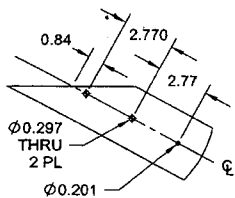
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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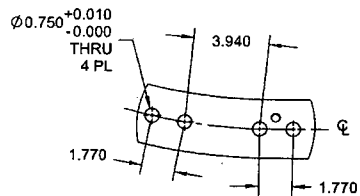
NOTE: Date & initial all entries



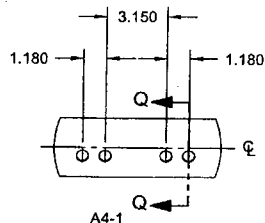
D4168-2 RH SKIDTUBE



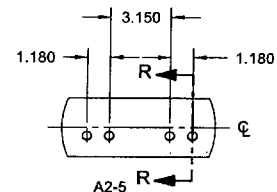
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SCALE 2X



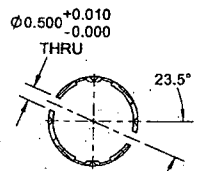
DETAIL K
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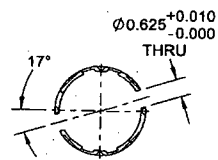
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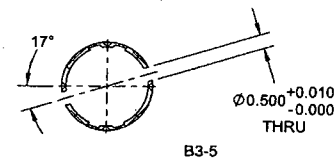
DETAIL M
SCALE 2X



SECTION N-N
SCALE 3X, 2 PL



SECTION Q-Q
SCALE 3X, 4 PL



SECTION R-R
SCALE 3X, 4 PL

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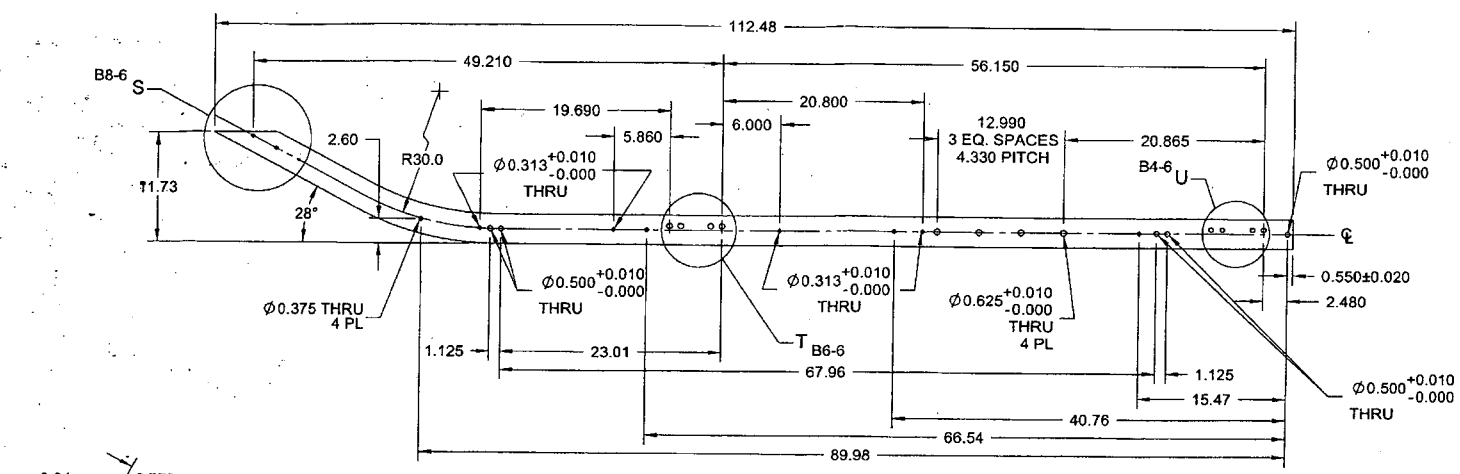
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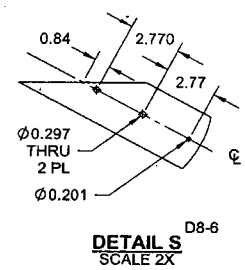
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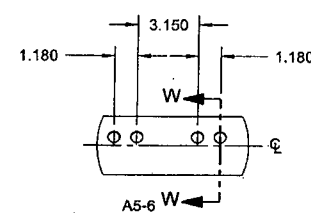
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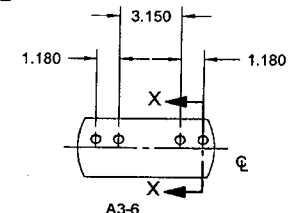
D4168-3 LH SKIDTUBE



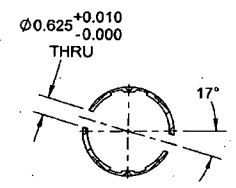
DETAIL S
SCALE 2X



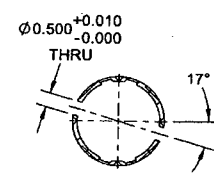
DETAIL T
SCALE 2X



DETAIL U
SCALE 2X



SECTION W-W
SCALE 3X, 4 PL



SECTION X-X
SCALE 3X, 4 PL

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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

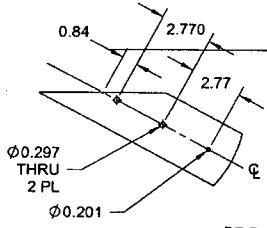
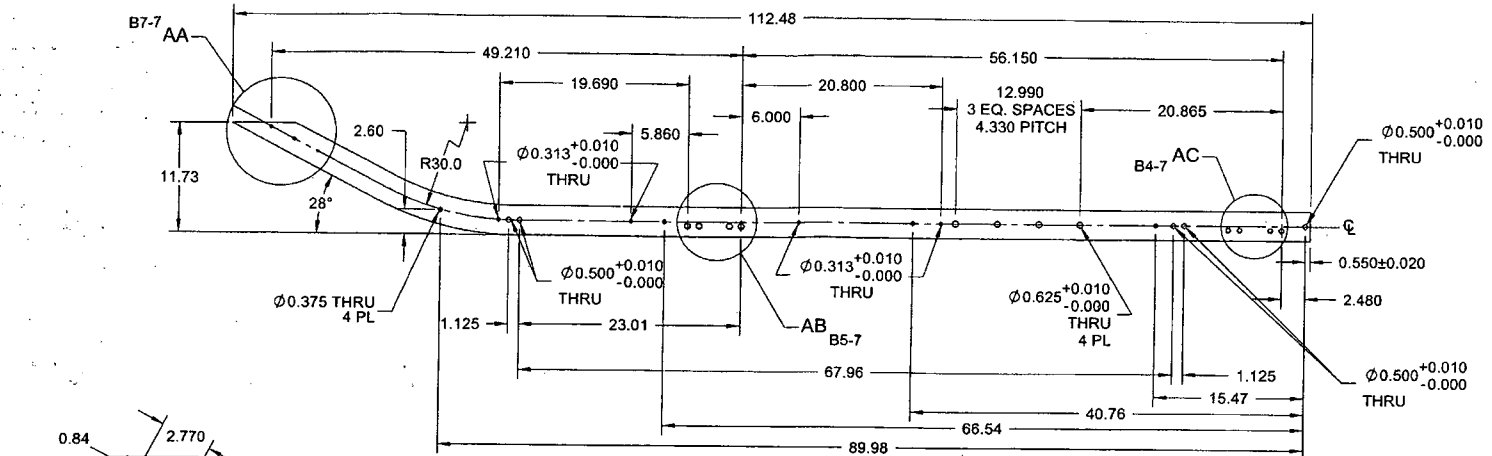
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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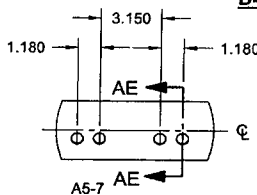
NOTE: Date & initial all entries

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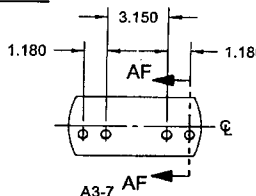
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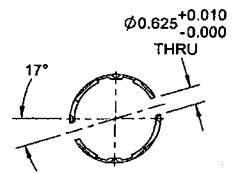
DETAIL AA
SCALE 2X
D7-7



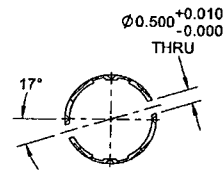
DETAIL AB
SCALE 2X
C4-7



DETAIL AC
SCALE 2X
D3-7



SECTION AE-AE
SCALE 3X, 4 PL
B6-7



SECTION AF-AF
SCALE 3X, 4 PL
B4-7

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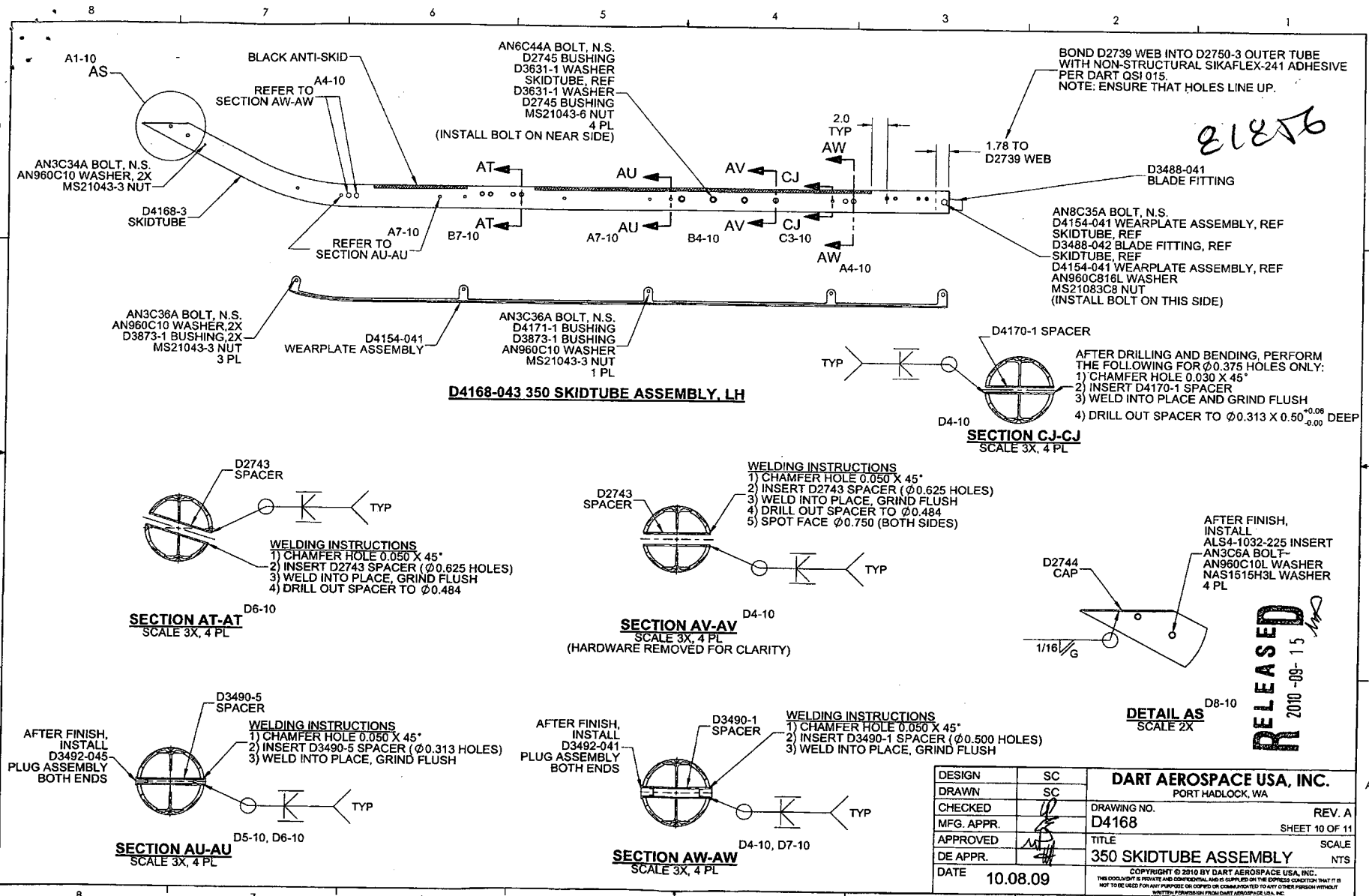
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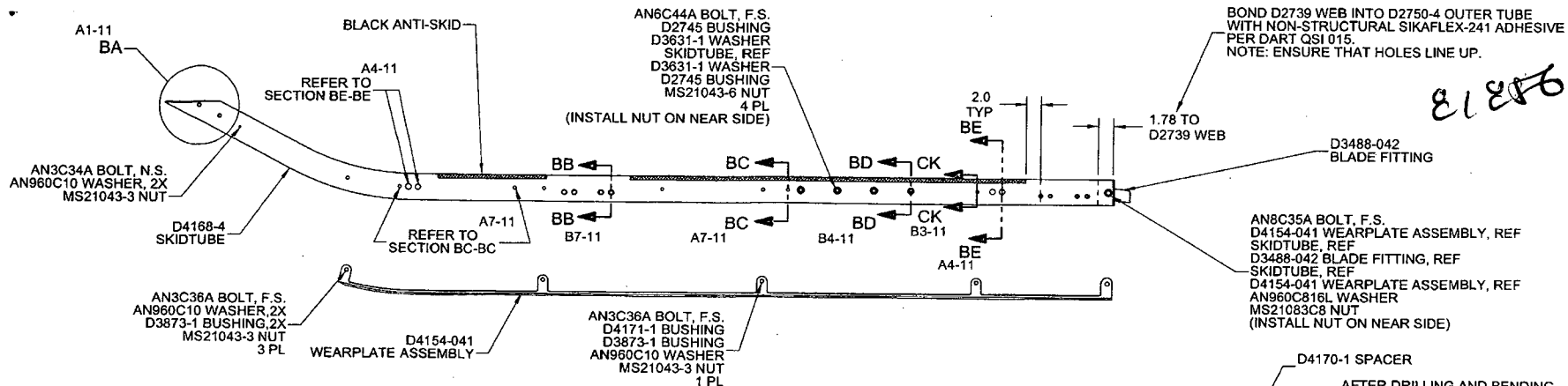
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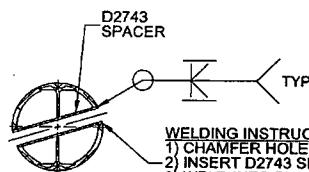
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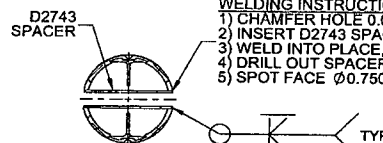


D4168-044 350 SKIDTUBE ASSEMBLY, RH



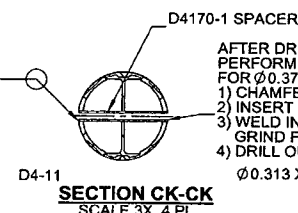
SECTION BB-BB SCALE 3X, 4 PL

- WELDING INSTRUCTIONS**
- 1) CHAMFER HOLE 0.050 X 45°
 - 2) INSERT D2743 SPACER (Ø0.625 HOLES)
 - 3) WELD INTO PLACE, GRIND FLUSH
 - 4) DRILL OUT SPACER TO Ø0.484



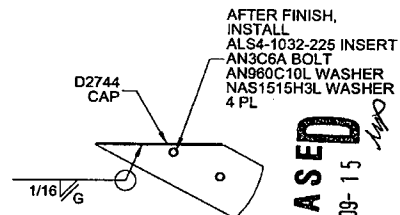
SECTION BD-BD SCALE 3X, 4 PL (HARDWARE REMOVED FOR CLARITY)

- WELDING INSTRUCTIONS**
- 1) CHAMFER HOLE 0.050 X 45°
 - 2) INSERT D2743 SPACER (Ø0.625 HOLES)
 - 3) WELD INTO PLACE, GRIND FLUSH
 - 4) DRILL OUT SPACER TO Ø0.484
 - 5) SPOT FACE Ø0.750 (BOTH SIDES)



SECTION CK-CK SCALE 3X, 4 PL

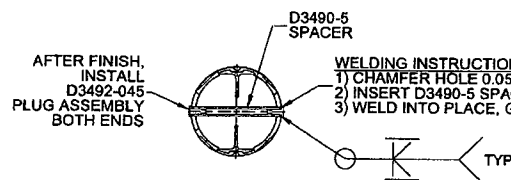
- AFTER DRILLING AND BENDING, PERFORM THE FOLLOWING FOR Ø0.375 HOLES ONLY:**
- 1) CHAMFER HOLE 0.030 X 45°
 - 2) INSERT D4170-1 SPACER
 - 3) WELD INTO PLACE AND GRIND FLUSH
 - 4) DRILL OUT SPACER TO Ø0.313 X 0.50^{+0.06}_{-0.00} DEEP



DETAIL BA SCALE 2X

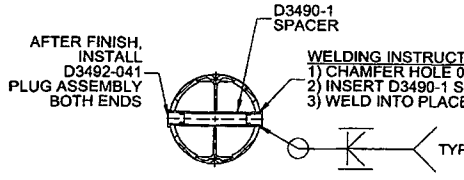
- AFTER FINISH, INSTALL ALS4-1032-225 INSERT AN3C6A BOLT AN980C10L WASHER NAS1515H3L WASHER 4 PL**

RELEASED
2010-09-15



SECTION BC-BC SCALE 3X, 4 PL

- WELDING INSTRUCTIONS**
- 1) CHAMFER HOLE 0.050 X 45°
 - 2) INSERT D3490-5 SPACER (Ø0.313 HOLES)
 - 3) WELD INTO PLACE, GRIND FLUSH



SECTION BE-BE SCALE 3X, 4 PL

- WELDING INSTRUCTIONS**
- 1) CHAMFER HOLE 0.050 X 45°
 - 2) INSERT D3490-1 SPACER (Ø0.500 HOLES)
 - 3) WELD INTO PLACE, GRIND FLUSH

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DRAWN	SC	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. A
MFG. APPR.		D4168	SHEET 11 OF 11
APPROVED		TITLE	SCALE
DE APPR.		350 SKIDTUBE ASSEMBLY	NTS
DATE	10.08.09	<small>COPYRIGHT © 2010 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR REPRODUCED IN ANY FORM OR BY ANY MEANS WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small>	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

NO. 294

AWS D17.1.2001
QUALIFICATION TEST RECORD

Name: Berclay Elliott
Job number: 83800
Part number: A350-636-012
Description: Skid tube
Welding Process: Tig[☒] Mig[]
Base material: Alum
Current: AC[☒] DC[]

TEST REQUIREMENTS AND RESULTS

Visual: pass[☒] fail[]
Penetration: pass[☒] fail[]

UNACCEPTABLE

Cracks: pass[☒] fail[]
Undercut: pass[☒] fail[]
Pin holes: pass[☒] fail[]
Overlap (cold lap): pass[☒] fail[]
Porosity (surface): pass[☒] fail[]
Coloration: pass[☒] fail[]

Qualifier David Anna Date of Test Coupon 12.05.09

Welder Berclay Elliott Date of Test Coupon 12.05.09

The above named individual is qualified in accordance with AWS D17.1.2001 to weld